SHINDENGEN

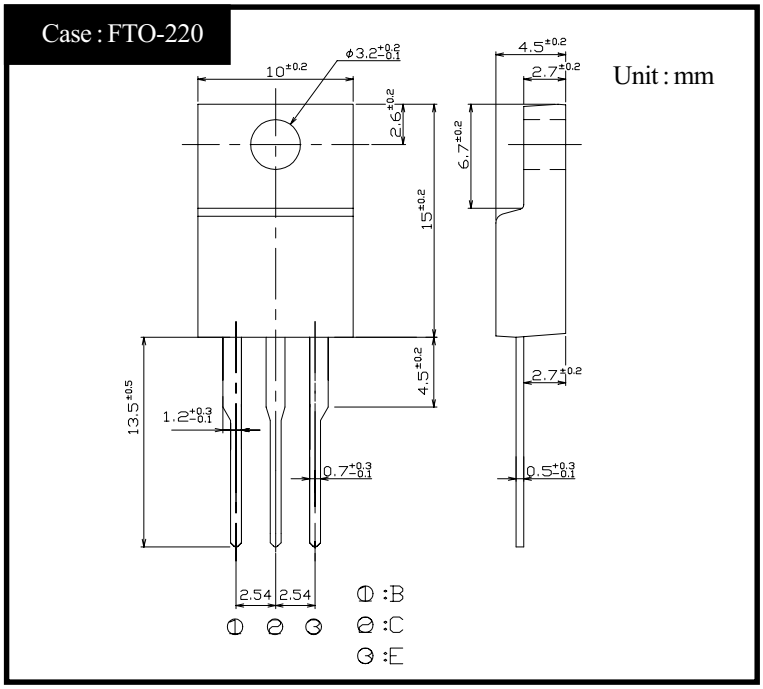
Switching Power Transistor

2SC5382

6A NPN

OUTLINE DIMENSIONS

Case : FTO-220



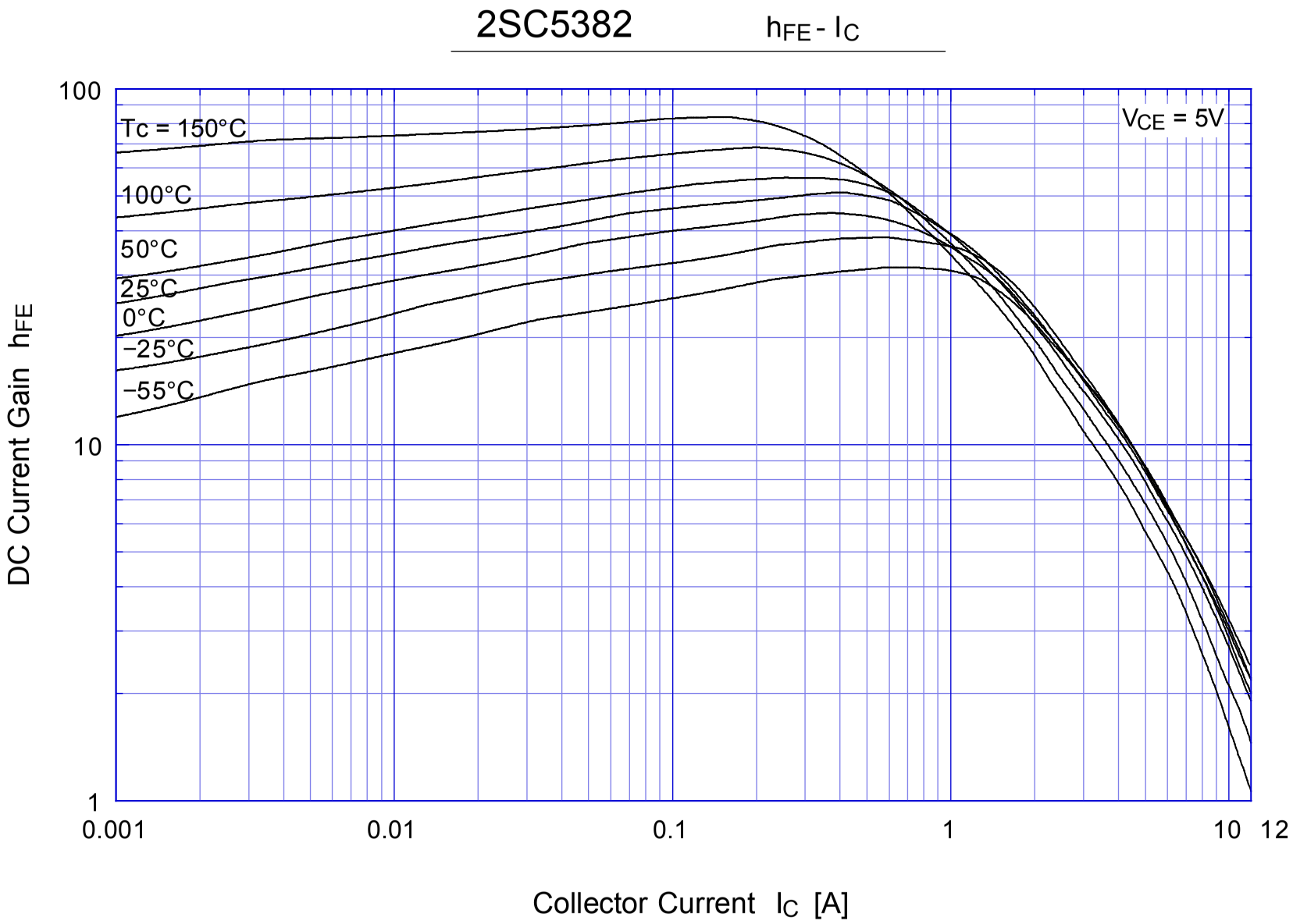
RATINGS

●Absolute Maximum Ratings

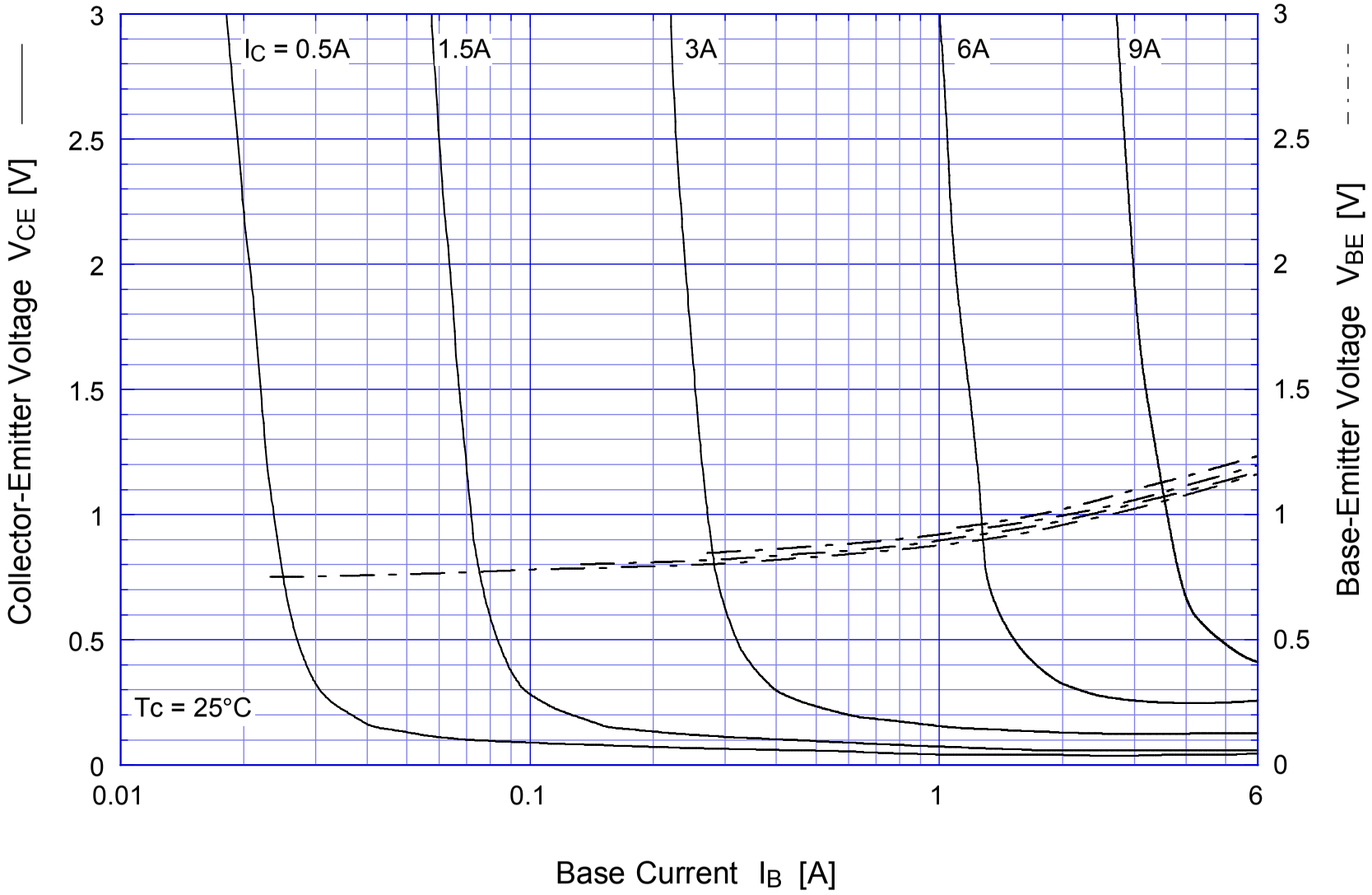
Item	Symbol	Conditions	Ratings	Unit
Storage Temperature	Tstg		−55～150	℃
Junction Temperature	Tj		150	℃
Collector to Base Voltage	V_{CBO}		1200	V
Collector to Emitter Voltage	V_{CEO}		550	V
Emitter to Base Voltage	V_{EBO}		9	V
Collector Current DC	I_C		6	A
Collector Current Peak	I_{CP}		12	
Base Current DC	I_B		3	A
Base Current Peak	I_{BP}		6	
Total Transistor Dissipation	P_T		40	W
Dielectric Strength	Vdis	Terminals to case, AC 1 minute	2	kV
Mounting Torque	TOR	(Recommended torque)	0.5(0.3)	N・m

●Electrical Characteristics (Tc=25℃)

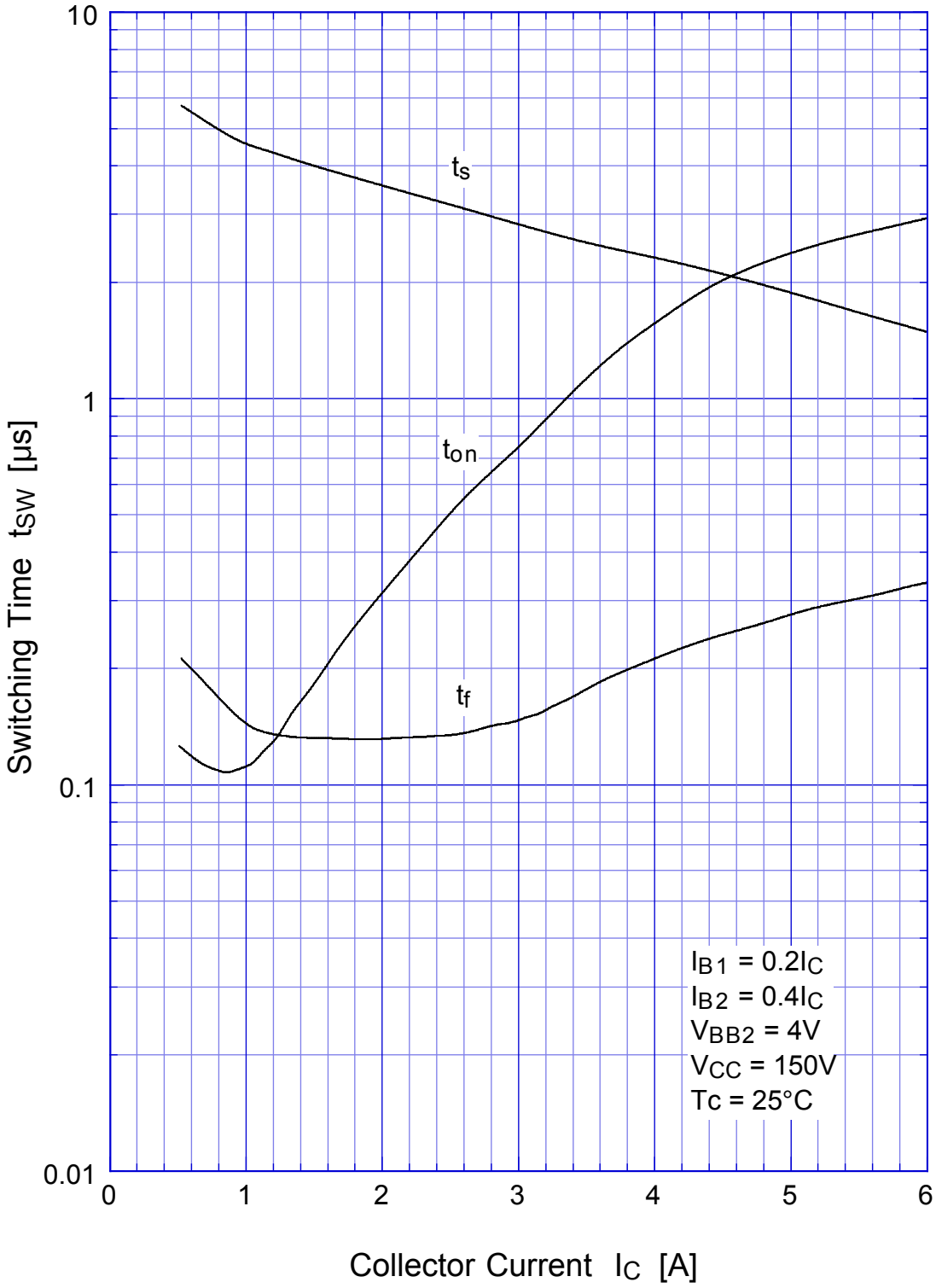
Item	Symbol	Conditions	Ratings	Unit
Collector to Emitter Sustaining Voltage	V_{CEO}(sus)	I_C = 0.1A	Min 550	V
Collector Cutoff Current	I_{CBO}	V_{CB} = 1200V	Max 0.1	mA
	I_{CEO}	V_{CE} = 550V	Max 0.1	
Emitter Cutoff Current	I_{EBO}	V_{EB} = 9V	Max 0.1	mA
DC Current Gain	h_{FE}	V_{CE} = 5V, I_C = 3A	Min 10	
	h_{FEL}	V_{CE} = 5V, I_C = 1mA	Min 10	
Collector to Emitter Saturation Voltage	V_{CE}(sat)	I_C = 3A	Max 1.0	V
Base to Emitter Saturation Voltage	V_{BE}(sat)	I_B = 0.6A	Max 1.5	V
Thermal Resistance	θ jc	Junction to case	Max 3.13	℃/W
Turn on Time	ton	I_C = 3A	Max 1.3	
Storage Time	ts	I_{B1} = 0.6A, I_{B2} = 1.2A	Max 4.0	μ s
Fall Time	tf	R_L = 50Ω, V_{BB2} = 4V	Max 0.3	


2SC5382
hFE - IC
100
10
1
Tc = 150°C
100°C
50°C
25°C
0°C
−25°C
−55°C
VCE = 5V
DC Current Gain hFE
0.001
0.01
0.1
1
10
12
Collector Current IC [A]

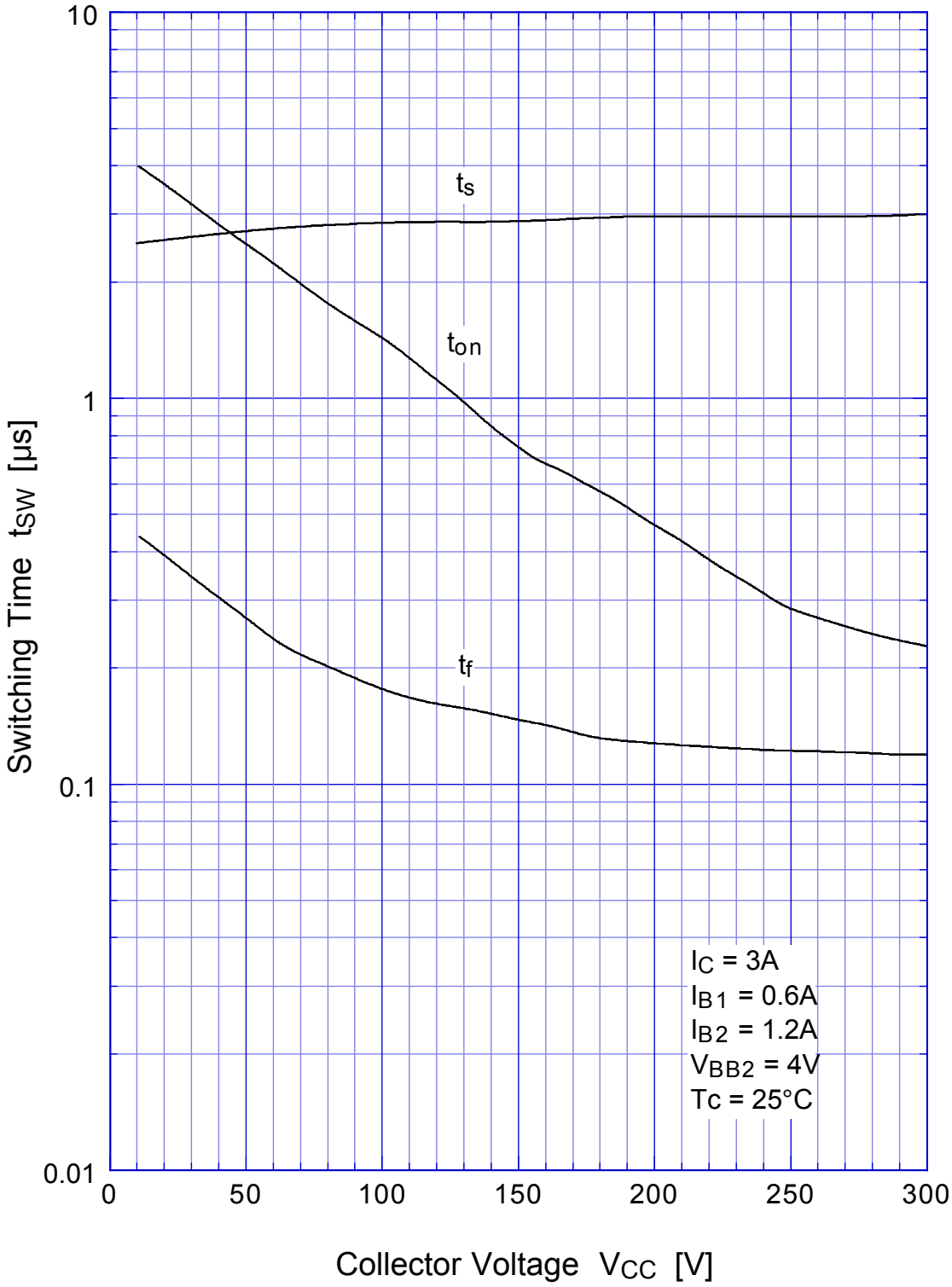
2SC5382 Saturation Voltage



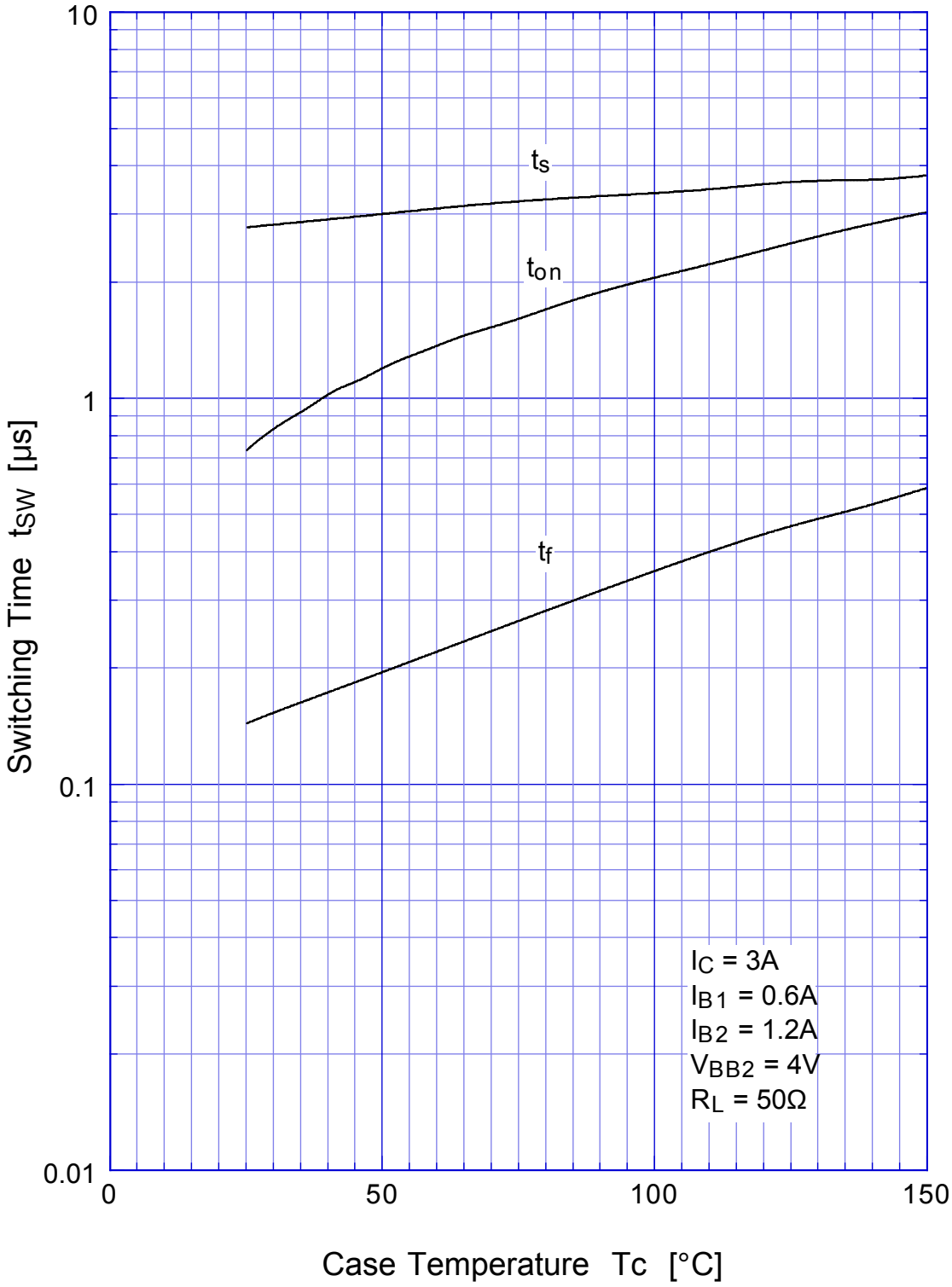
2SC5382 Switching Time - I_C

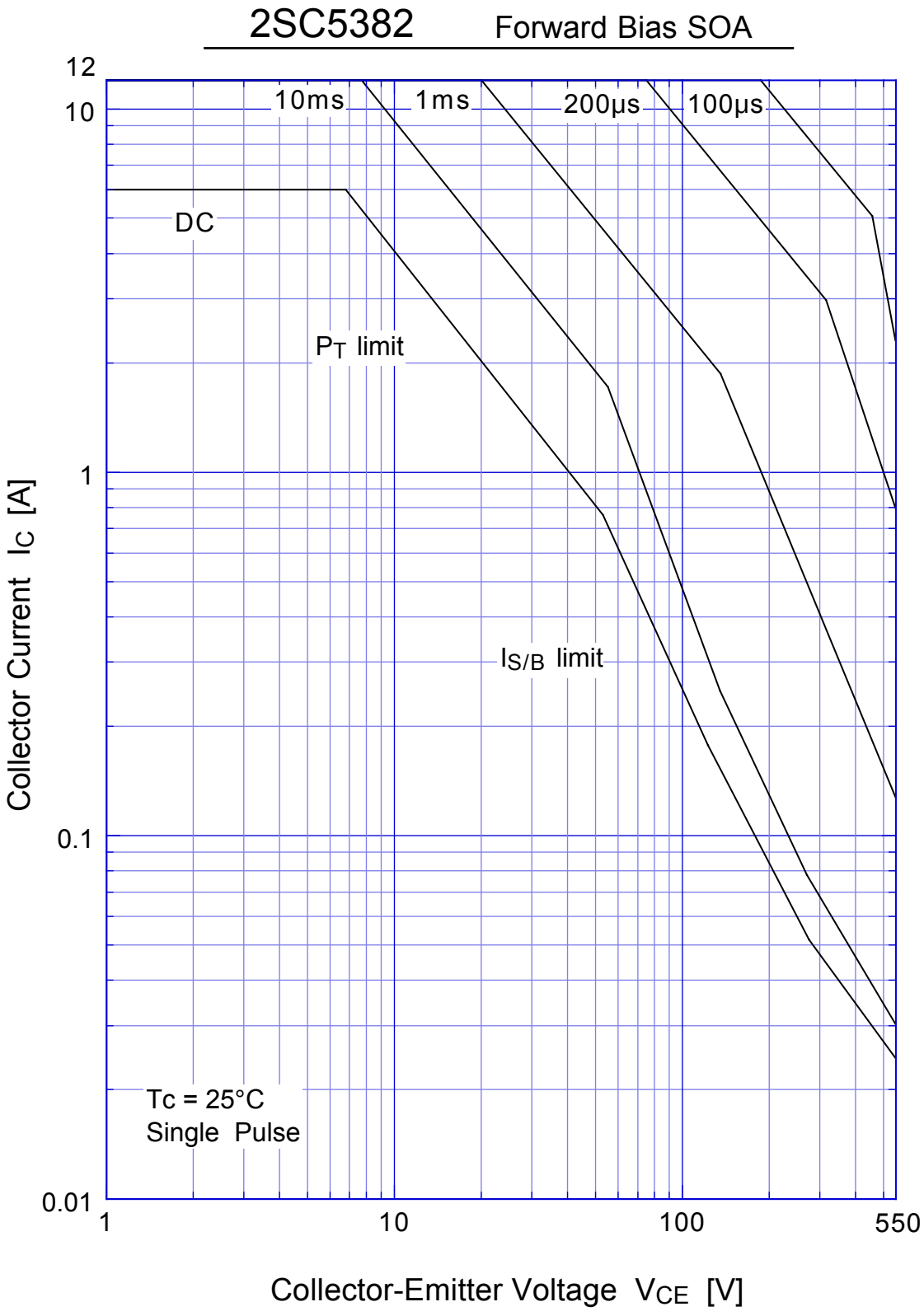


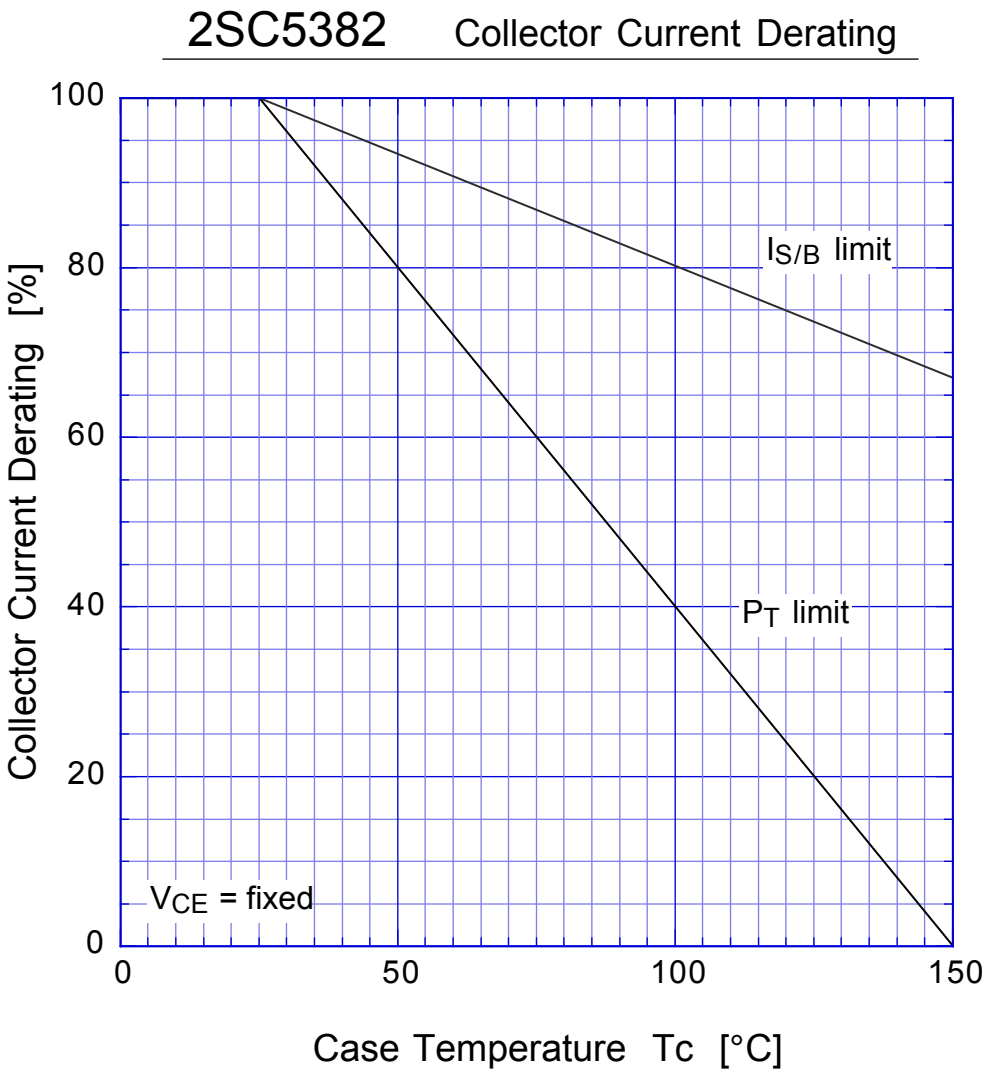
2SC5382 Switching Time - V_{CC}

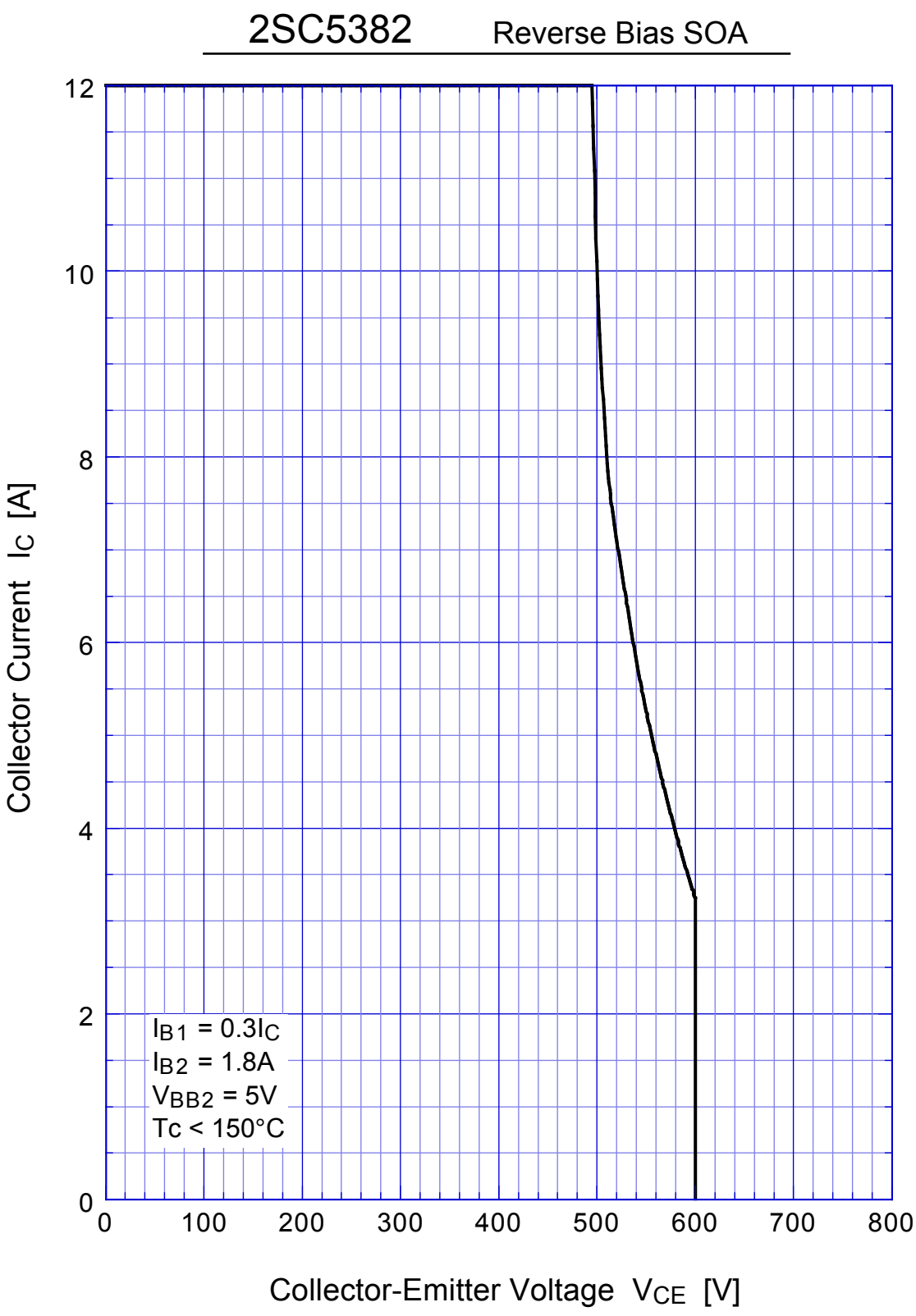


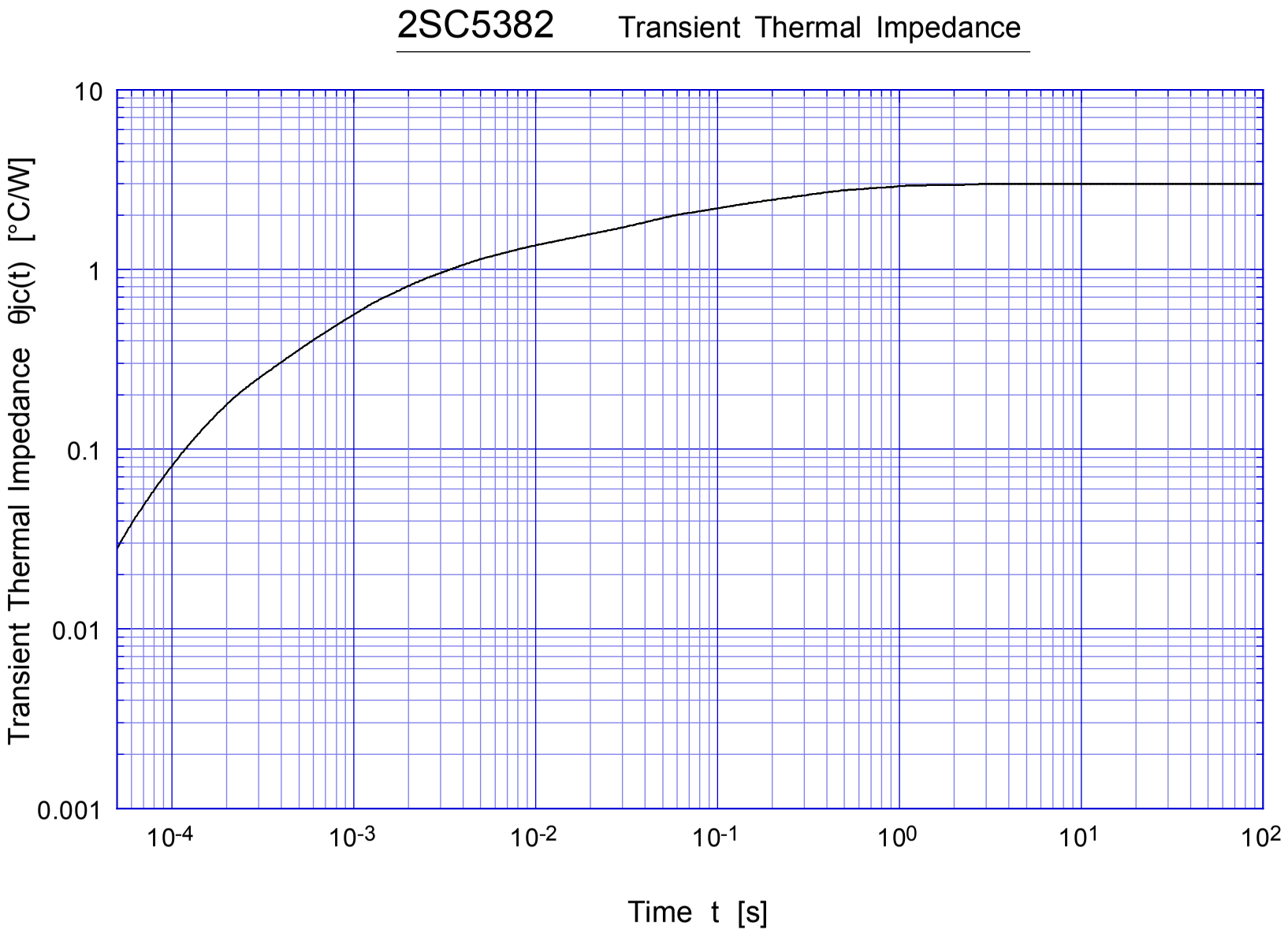
2SC5382 Switching Time - Tc




2SC5382
Forward Bias SOA
12
10
1
0.1
0.01
1
10
100
550
10ms
1ms
200µs
100µs
DC
PT limit
IS/B limit
Tc = 25°C
Single Pulse
Collector Current IC [A]
Collector-Emitter Voltage VCE [V]


2SC5382 Collector Current Derating
100
80
60
40
20
0
Collector Current Derating [%]
0
50
100
150
Case Temperature Tc [°C]
IS/B limit
PT limit
VCE = fixed


2SC5382
Reverse Bias SOA
Collector Current I_C [A]
Collector-Emitter Voltage V_{CE} [V]
I_{B1} = 0.3I_C
I_{B2} = 1.8A
V_{BB2} = 5V
Tc < 150°C
0
2
4
6
8
10
12
0
100
200
300
400
500
600
700
800


2SC5382 Transient Thermal Impedance
Transient Thermal Impedance θjc(t) [°C/W]
10
1
0.1
0.01
0.001
10-4
10-3
10-2
10-1
100
101
102
Time t [s]